

03–210 Removal and installation of oil pan assembly

Oil capacity in liters






Engine	615				616		617
	1st version 615.912 615.913 to end chassis No. 120 829 056 238		2nd version 615.912 615.913 from end chassis No. 120 830 056 239		and 3rd version 615.912 615.913 from end chassis No. 400 001 200 001		
Oil pan	4.0		4.5		5.0		5.5
Oil filter	1 (1.5) ¹⁾						
Air-cooled oil cooler	0.5 (0.4) ¹⁾					0.5	

¹⁾ In Type 123.1

Tightening torques

		Nm	(kpm)
Oil drain plug in oil pan	M 26	50	(5)
	M 12	40	(4)
Nut for engine stop on crossmember (type 115.1)		90	(9)
Adjusting screw for front engine stop (type 123.1)		130	(13)
Adjusting screw for rear engine mount (type 123.1)		40	(4)
Upper part of oil pan to crankcase		10	(1)
Lower part of oil pan to upper part			
Engine bearer to engine mount front	M 12	70	(7)
	M 10	40	(4)

Special tools

Torque wrench handle 20–100 Nm (2–10 kpm)		001 589 35 21 00
Torque wrench handle 50–200 Nm (5–20 kpm)		001 589 44 21 00
Attachable ratchet, 1/2" drive for torque wrench handle		001 589 42 09 00
Screwdriver with tommy bar for socket-head screws 5 mm, 300 mm long		116 589 02 07 00
Remover 9 mm dia. (type 123.1)		110 589 02 15 00
Stud-end/box-end wrench 14 x 17 mm		000 589 24 07 00

Socket 27 mm, 1/2" drive,
to crank engine



001 589 65 09 00

Installer for oil
dipstick guide tube



117 589 00 31 00

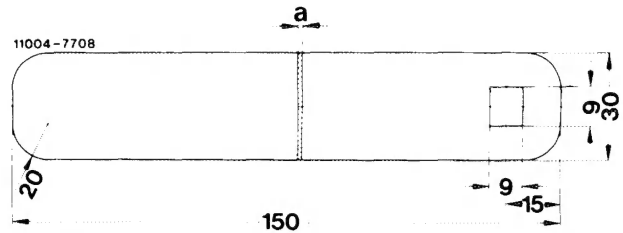
Commercially available tool

Engine hoist, 1.5 t lifting capacity

e.g. Bäcker, 5630 Remscheid,
order No. 3178

Shop-made tool

Gauge, size a = 1.0 mm



A. Type 115.1

Removal

- 1 Drain engine oil.
- 2 For vehicles with automatic transmissions, fully unscrew gear oil cooler lines.
- 3 Attach rope of engine hoist to front suspension lug on cylinder head.
The suspension lug used for engines in type 123 is to be additionally bolted to cylinder head.
- 4 Slightly raise engine, using hoist and crane.

Note: Remove engine hood if space is short.

5 Remove complete front axle (33—100).

Note: For working under engine, additionally secure engine to hoist.

6 For models with power steering, also remove power steering pump and bracket.

7 On engine 615, unscrew engine stop.

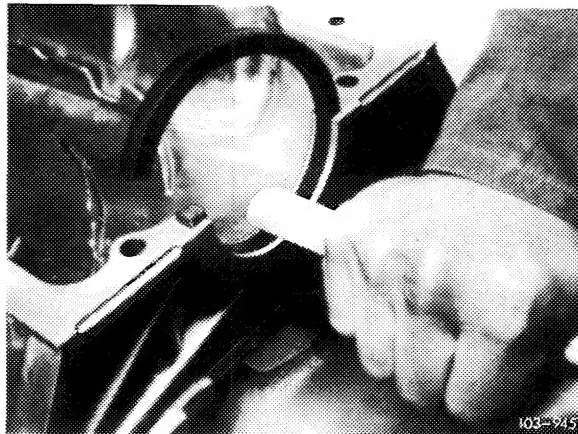
8 Unscrew and remove upper part of oil pan.

9 Thoroughly clean parting surfaces of crankcase and upper part of oil pan.

Installation

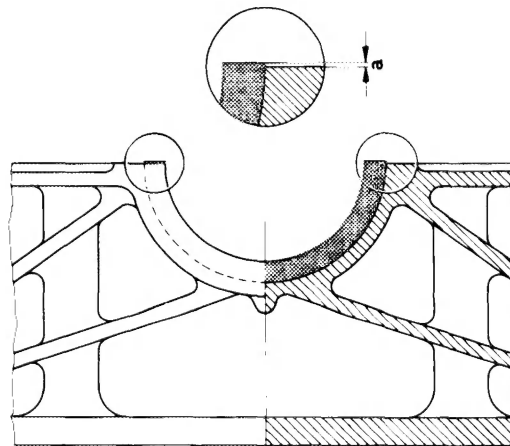
10 Depending on condition, replace rear radial seal in oil pan.

Introduce new radial seal into groove and work into position using an oily hammer handle.



11 To obtain overlap, cut off radial seal 1 mm above parting surface. Use shop-made gauge for this purpose.

12 Apply engine oil to radial seal.



Size a = 1 mm

13 Apply even coat of compound, part No. 001 989 46 20, to parting surface of upper part of oil pan.

14 Apply and fasten upper part of oil pan.

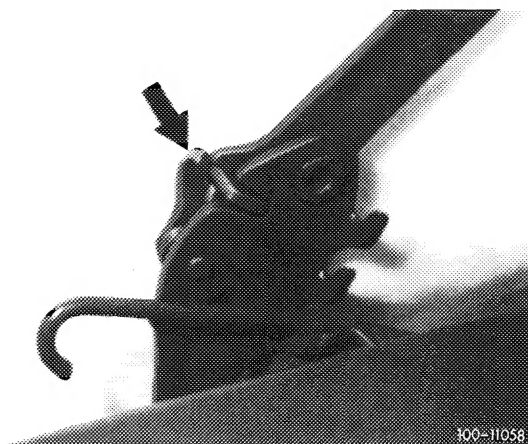
15 Now proceed in reverse order of removal.

B. Type 123.1

Removal

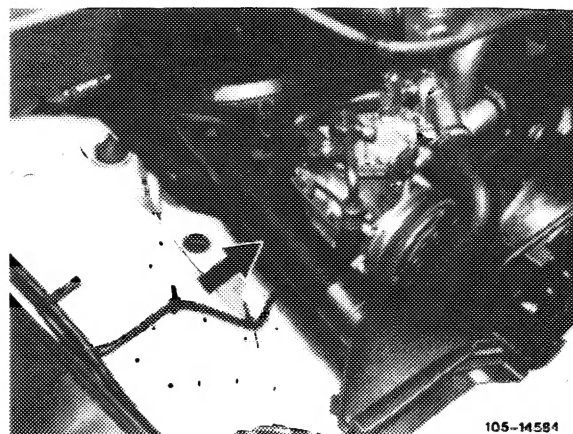
1 Drain engine oil.

2 Lift engine hood to 90° position and lock left-hand latch (arrow).

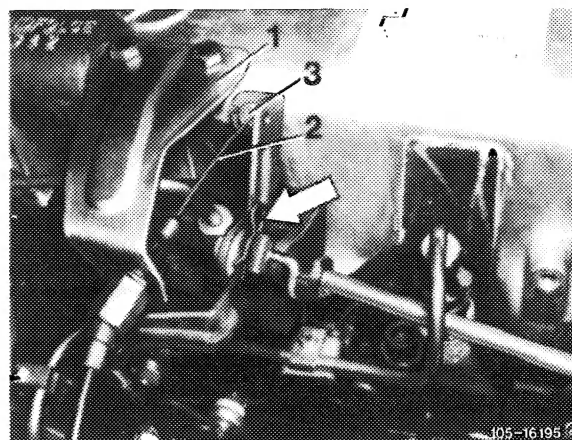


3 On engine 617, remove adapter at air cleaner (arrow).

On models with oil bath air cleaners, release and remove rubber gaiter from throttle body.

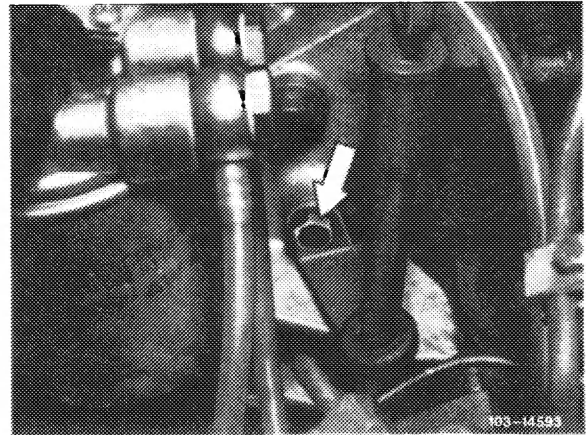


4 If model features uprated engine, also remove longitudinal control spindle. Unhook control rods for this purpose. Withdraw retainer (arrow) and force longitudinal control spindle in aft direction.



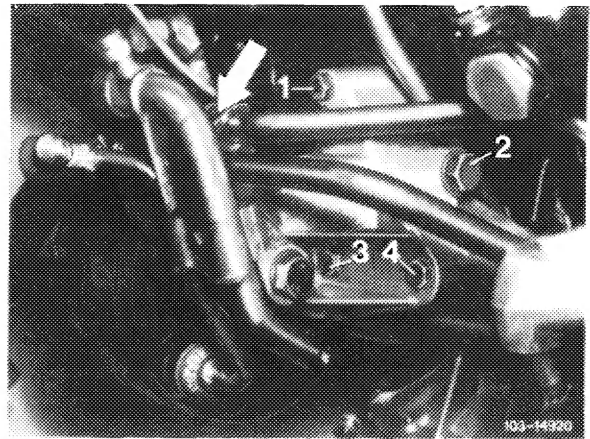
5 Unscrew clip attaching oil dipstick guide tube to power steering pump bracket and crankcase.

6 On models with power steering, draw fluid off reservoir and unscrew return line at steering.

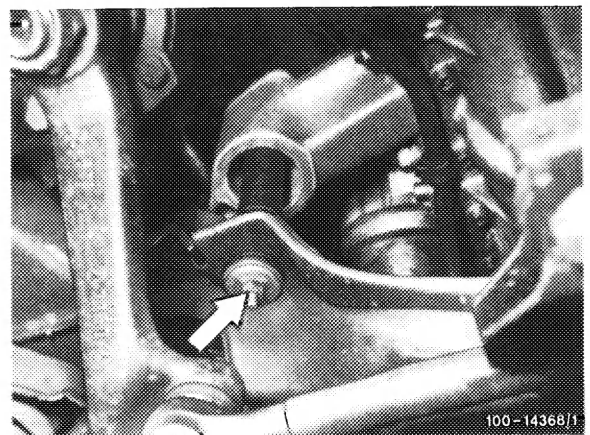


7 Release and remove V-belt of Delco refrigeration compressor.

Unscrew refrigeration compressor and bracket. To do so, unscrew bolts (1-4) and release clamp (arrow) holding air-cooled oil cooler lines.

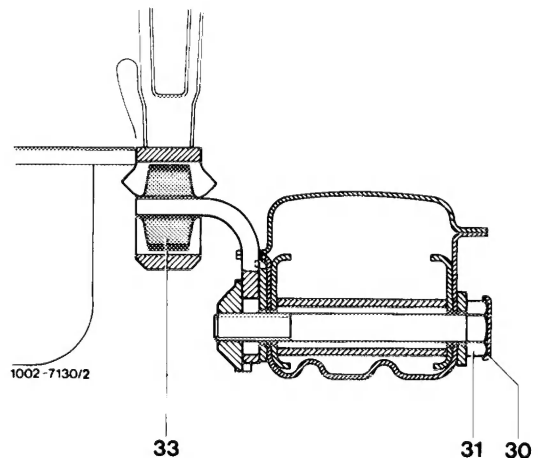


8 Unscrew engine shock absorber at crossmember and bracket for upper transverse link (arrow).

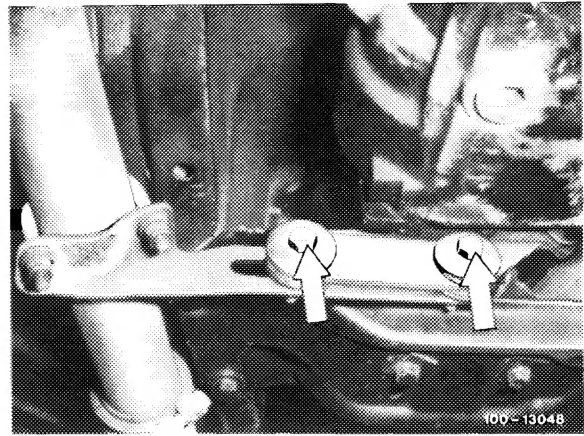


9 Lift up retainer (30) at front engine stop, swing away to one side and remove adjusting screw (31).

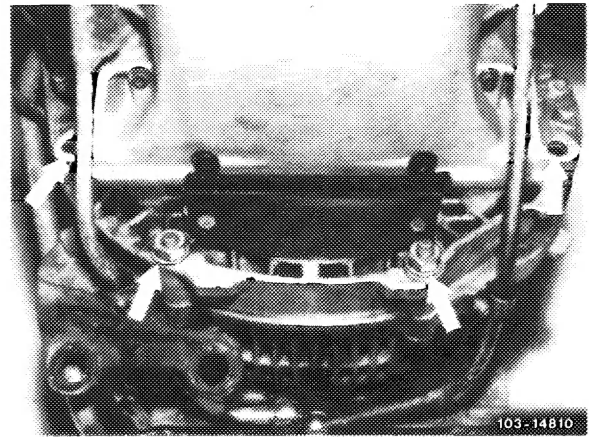
10 On vehicles with automatic transmissions, unscrew gear oil cooler lines at cooler and at clutch casing.



- 11 Release support on transmission bracket at exhaust side.
- 12 Release rear engine mount on engine bearer.
- 13 Unscrew and remove lower part of oil pan.
- 14 Remove oil pump.



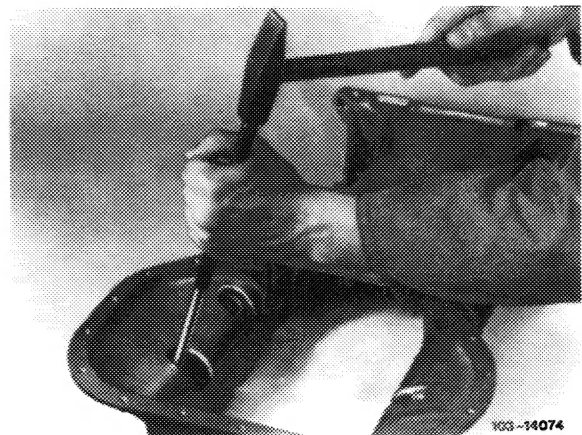
- 15 Unscrew bottom 4 bolts in intermediate flange (arrows).
- 16 Unscrew cover on intermediate flange.



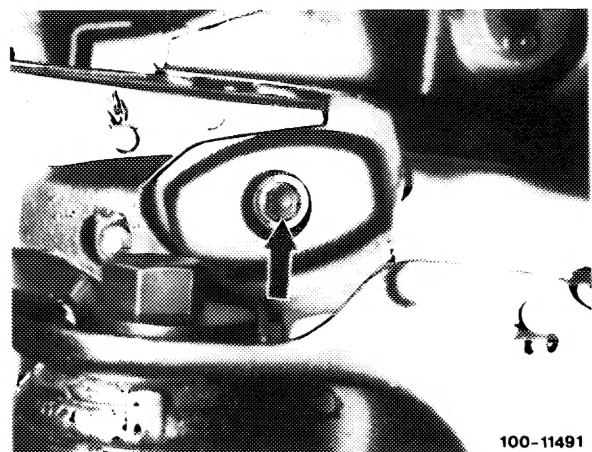
- 17 Using 9 mm diameter remover for valve guides, force out oil dipstick guide tube as far as possible.

Caution:

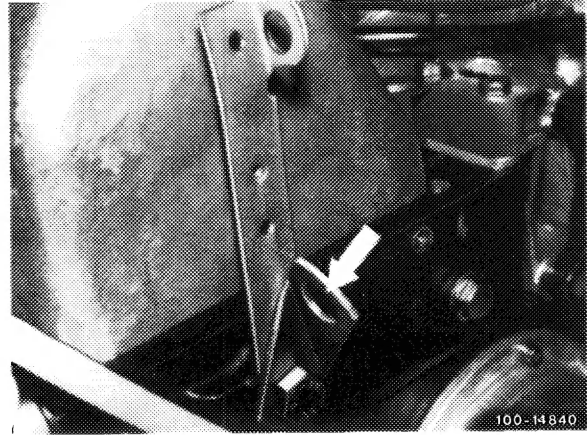
The oil dipstick guide tube cannot be withdrawn yet.



- 18 Unscrew engine bearer bolts at engine mount, working from below.
- 19 Unscrew upper part of oil pan.



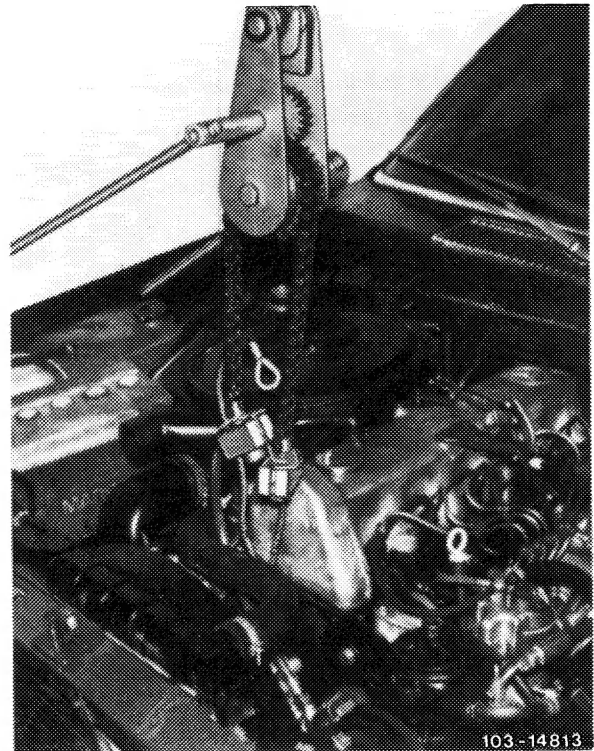
20 Attach hoist rope to suspension lug at front of cylinder head (arrow).



21 Using hoist and crane, raise engine until upper part of oil pan can be removed.

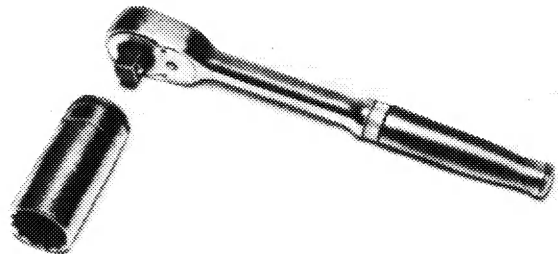
While lifting engine, make sure that fan has enough clearance.

Withdraw oil dipstick guide tube.



To remove oil pan, turn crankshaft with tool combination until upper part of oil pan can be drawn out beneath the connecting rods and crankshaft webs.

22 Thoroughly clean parting surfaces of crankcase, and upper/lower parts of oil pan.

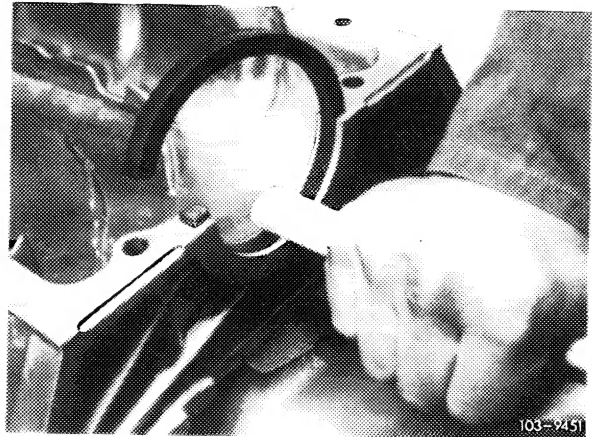


Installation

Note: If the upper part of the oil pan is replaced by a new one, use engine stop and bracket from old upper part.

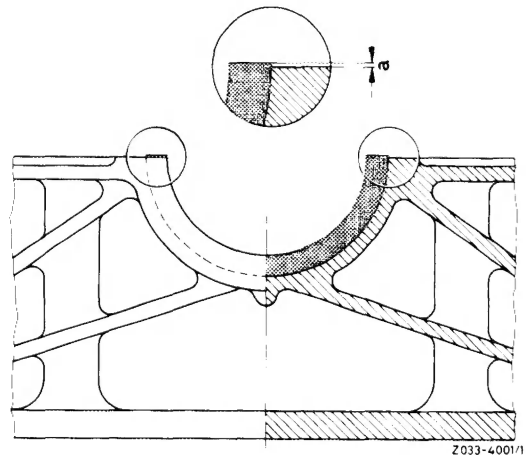
23 Depending on condition, replace rear radial seal in oil pan.

Insert new radial seal into groove and work into position, using an oily hammer handle.



24 To obtain overlap, cut off radial seal 1 mm above parting surface. Use shop-made gauge for this purpose.

25 Apply engine oil to radial seal.



26 Apply even coat of sealant, part No. 001 989 46 20, to parting surface of upper part of oil pan. Be sure never to use any other sealant.

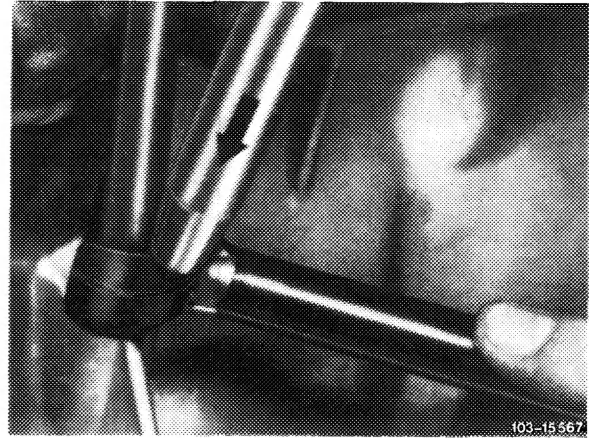
27 Place upper part of oil pan in position, introducing oil dipstick guide tube.

28 Fasten upper part of oil pan.

29 Drive oil dipstick guide tube home to flange, using installer.

30 Lower engine. Make sure that shields assume correct position and that engine shock absorbers enter holes in crossmember and bracket for upper transverse link.

31 Install oil pump.



32 Attach lower part of oil pan, using new gasket.

33 Now proceed in reverse order of removal.

34 Adjust engine stop (00-220).

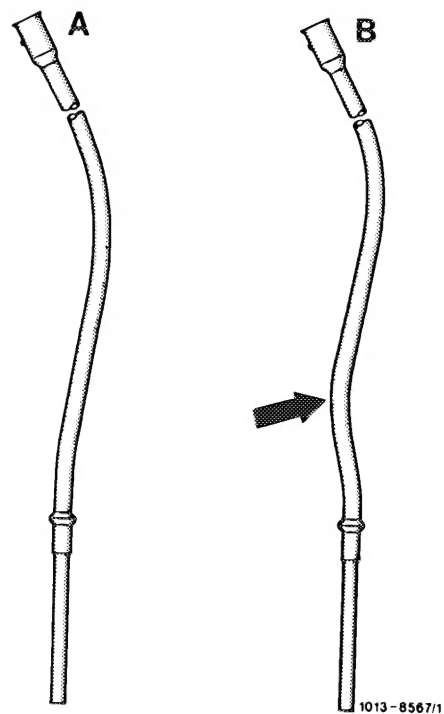
35 Fill with engine oil.

36 Run engine and fill transmission with gear oil.

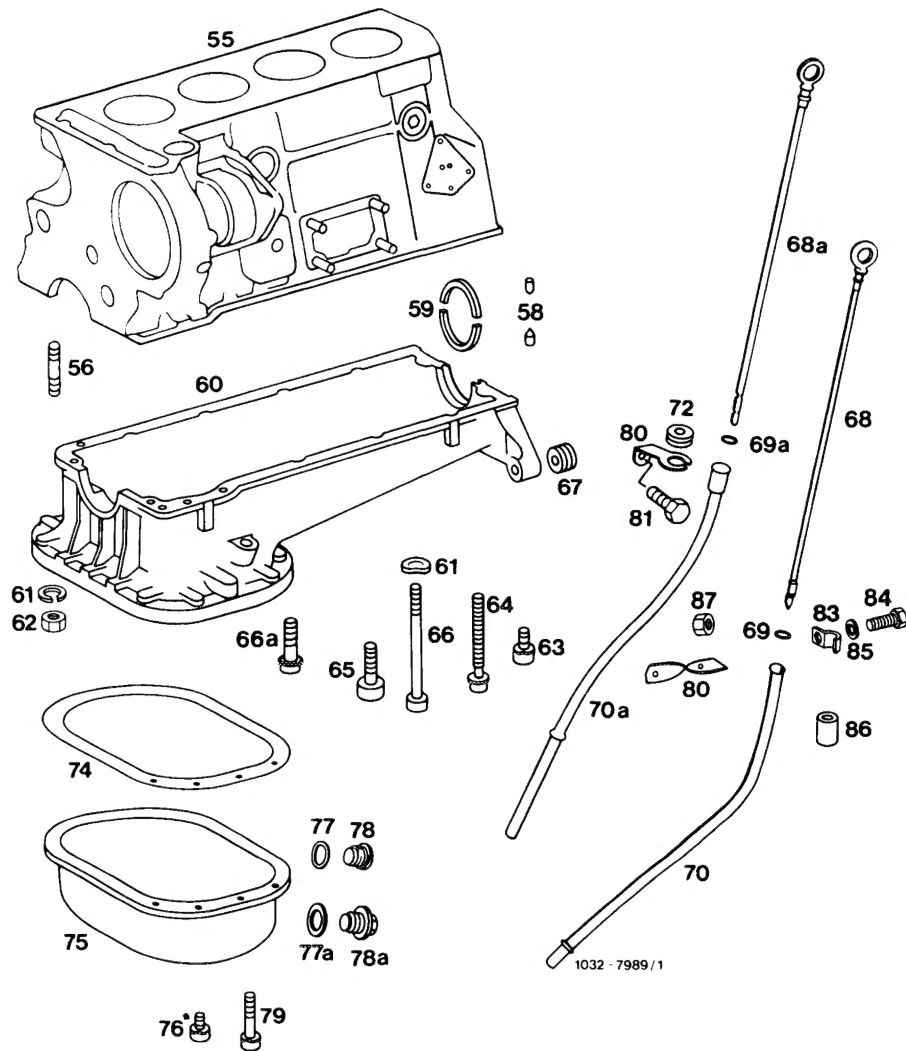
37 Warm up engine and check for leakage.

Note: If Delco refrigeration compressor is fitted, note different shape of oil dipstick guide tube (B, arrow).

The oil dipstick guide tubes cannot be interchanged.



Crankcase and oil pan



- | | | | |
|-----|--|-----|---|
| 55 | Crankcase | 71 | Bracket for oil dipstick guide tube |
| 56 | 2 bolts M 8 x 25 | 72 | Rubber grommet |
| 58 | Retaining pin | 74 | Gasket |
| 59 | Radial seal, crankshaft | 75 | Lower part of oil pan |
| 60 | Upper part of oil pan | 76 | Screw assembly (14 for engines 615.912/913, 616.916, 617.910, and 17 for engines 615.940/941, 616.912, 617.912) |
| 61 | 4 spring washers B 8 | 77 | Sealing ring C 26 x 32 (1st version) |
| 62 | 2 nuts M 8 | 77a | Sealing ring A 12 x 17 (2nd version) |
| 63 | 14 screw assemblies M 6 x 15 (18 for engine 617.910, 16 for 617.912) | 78 | Oil drain plug (1st version) |
| 64 | 2 screw assemblies M 6 x 60 | 78a | Oil drain plug M 12 (2nd version) |
| 65 | 2 screw assemblies M 6 x 30 | 79 | 3 screw assemblies M 6 x 30 (engines 615.912/913, 616.916) |
| 66 | 2 bolts M 8 x 95 | 80 | Bracket for oil dipstick guide tube |
| 66a | 2 bolts M 8 x 25 | 81 | Bolt M 8 x 12 |
| 67 | 2 thread inserts 10/14 x 20 | 82 | Spring washer A 8 |
| 68 | Oil dipstick (engines 615.912/913, 616.916, 617.910) | 83 | Clamp 1 x 18 |
| 68a | Oil dipstick (engines 615.940/941, 616.912, 617.912) | 84 | Bolt M 6 x 8 |
| 69 | O-ring (engines 615.912/913, 616.916, 617.910) | 85 | Washer A 6.4 |
| 69a | O-ring (engines 615.940/941, 616.912, 617.912) | | |
| 79 | Oil dipstick guide tube (engines 615.912/913, 616.916, 617.910) | | |
| 70a | Oil dipstick guide tube (engines 615.940/941, 616.912, 617.912) | | |